DOCUMENT RESUME

ED 044 831 24 EA 003 213

TITLE	ERIC Abstracts: A Collection of ERIC Document Resumes on Performance Objectives.
INSTITUTION	American Association of School Administrators, Washington, D.C.; Oregon Univ., Eugene. ERIC Clearinghouse on Educational Administration.
SPONS AGENCY	National Center for Educational Research and Development (DHEW/CE), Washington, D.C.
BUREAU NO	BR-8-0353
PUB DATE	Nov 70
CONTRACT	OEC-0-8-080353-3514
NOTE	35p.; ERIC Abstract Series Number 12
AVAILABLE FROM	American Association of School Administrators, 1201 Sixteenth Street, N.W., Washington, D.C. 20036 ($2.00, quantity discounts)
EDRS PRICE	EDRS Price MF-$0.25 HC-$1.85
DESCRIPTORS	*Abstracts, Bibliographies, Clearinghouses, *Educational Objectives, *Evaluation, Evaluation Criteria, *Performance Criteria, Performance Factors

ABSTRACT

ERIC abstracts on performance objectives, announced in RIE through October 1970, are presented. The key terms used in compiling this collection are "educational objectives," "performance criteria," and "performance factors." The following information is presented for each document: author, title, place of publication, publisher, publication date, number of pages, ERIC document (ED) number, price and availability, and abstract. A subject index is cross-referenced with the document listing. (RA)

EDO 44831

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ERIC Abstracts on:

Performance Objectives

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ERIC Abstracts

A Collection of ERIC Document Resumes on

Performance Objectives

Compiled by

the

ERIC Clearinghouse on
Educational Management
University of Oregon
Eugene, Oregon 97403

November 1970

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ERIC Abstracts Series, Number Twelve

Published by

American Association of School Administrators
1201 Sixteenth Street, N.W.
Washington, D.C. 20036

Single copy, $2.00

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PREFACE

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Research reports are announced in Research in Education (RIE), available in many libraries and by subscription for $21 a year from the United States Government Printing Office, Washington, D.C. 20402. Most of the documents listed in RIE can be purchased through the ERIC Document Reproduction Service, operated by the National Cash Register Company.

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Besides processing documents and journal articles, the Clearinghouse has another major function--information analysis and synthesis. The Clearinghouse prepares bibliographies, literature reviews, state-of-the-knowledge papers, and other interpretive research studies on topics in its educational area.

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Philip K. Piele
Director

INTRODUCTION

Since the beginning of ERIC in 1966, more than 30,000 documents have been announced in ERIC's monthly catalog, Research in Education (RIE). Of this total, about 1,500 documents have been processed by this Clearinghouse. So extensive is this growing collection of documents that we thought it would be useful to compile separate lists of ERIC documents on a number of critical topics in educational administration. Published separately, these selected lists of documents comprise the ERIC Abstracts series.

To compile each list, a search is made of the RIE indexes, using key terms that define the topic being searched. The terms used to compile this collection of documents on performance objectives are EDUCATIONAL OBJECTIVES, PERFORMANCE CRITERIA, and PERFORMANCE FACTORS. Relevance to the topic is the only criterion for listing a document. The listing is complete for all issues of RIE through October 1970. Not all of the listed documents were processed by this Clearinghouse.

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A subject index, beginning on page 27, is cross-referenced with the document listing. The subject terms, arranged in alphabetical order, are identical to those contained in RIE's subject index.

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1. Beard, Ruth M., and others. Objectives in Higher Education. London, England: Society for Research into Higher Education, Ltd., 1968. 85 pages. ED 028 723 MF $0.50 HC $4.35.

This is the first in a series of books that will deal with different aspects of teaching and learning in higher education, such as students' learning and individual differences, teaching methods, and new teaching techniques. Four papers examine general objectives in higher education and relate them to techniques of evaluation and teaching methods. The papers acknowledge that some recent modifications of curricula and methods arise from considerations of certain objectives in university teaching, but attempt to demonstrate that a more detailed analysis of purposes and aims in teaching would not only be profitable but will soon become essential. Whether objectives are likely to be realized or not depends on a number of factors, including the way in which they are evaluated, the processes employed in learning, and the consonance of objectives with the needs and abilities of students and with the requirements of the society in which students live. These factors are surveyed in the first paper. The second discusses the evolution of educational objectives in European universities of the nineteenth and twentieth centuries. The third outlines some approaches to more detailed analyses of specific objectives, and the final paper discusses problems in evaluating objectives effectively.

2. Bemis, Katherine A., and Schroeder, Glenn B. The Writing and Use of Behavioral Objectives. Albuquerque, New Mexico: Southwestern Cooperative Educational Laboratory, 1969. 74 pages. ED 033 881 MF $0.50 HC $3.80.

This manual, specifically designed to accompany formal instruction in the writing of behavioral objectives, is also intended for use by individuals desiring knowledge of behavioral objectives and behavioral domain concepts. The introductory chapter on rationale for use of behavioral objectives outlines an instructional cycle designed to aid teachers in making curricular decisions and in preparing evaluative measures of pupil progress. The major section on the behavioral domains includes (1) discussion justifying teachers' concern with the classification of behavior, (2) presentation of the hierarchical structure of the cognitive, affective, and psychomotor domains with examples of behavioral objectives for each class or level in the taxonomy, and (3) illustration of the interrelationship of the three domains. This section is supplemented with a condensed version of the taxonomy of educational objectives in each domain: cognitive (Bloom, 1956), affective (Krathwohl, 1964), and psychomotor (Simpson, 1966). Other chapters deal with (1) "entering behavior," that which a learner should have acquired or be able to demonstrate before he can perform that called for in an objective;

(2) the actual formulation of behavioral objectives with three components--the doer, the overt behavior (action verb), and the given conditions and standards; and (3) the classroom application of behavioral objectives.

3. Bressler, Marvin, and Tumin, Melvin M. Evaluation of the Effectiveness of Educational Systems. Final Report. Volume I. Princeton, New Jersey: Princeton University, 1969. 447 pages. ED 033 469 MF $1.75 HC not available from EDRS.

   Volume I discusses the background, findings and analysis, and conclusions and recommendations of a two-volume study aimed at developing a cross-national model to enable the United States and five European democracies, England, France, Italy, the Netherlands, and West Germany, to make more adequate estimates of the effectiveness of their primary and secondary schools. Two major tasks attempted were the development of taxonomy for the classification of claimed and confirmed educational outcomes, and a comprehensive measure to indicate a gross educational product. Appendices include an annotated bibliography on the aims and outcomes of education and a case study of the application of the model of educational goals and outcomes to materials published by educational sources in New Jersey. Two articles, "Evaluation of Educational Goals" and "Problems in the Theory and Method of the Classification of Outcomes," are included.

4. Bressler, Marvin, and Tumin, Melvin M. Evaluation of the Effectiveness of Educational Systems. Final Report. Volume II. Princeton, New Jersey: Princeton University, 1969. 567 pages. ED 033 470 MF $2.25 HC not available from EDRS.

   This report is the second volume of a study aimed at developing a cross-national model to estimate the effectiveness of primary and secondary schools in the United States and five European countries. The following articles are included: (1) "Educational Goals and Outcomes in England," (2) "Major Changes in French Education in the Twentieth Century," (3) "The Aims of Education in Western Germany: Their Manifestations and Social Determinants," (4) "The Aims, Values, and Content of Education as Manifested in the Curriculum in West German Schools," (5) "Educational Goals in Italy," (6) "Educational Goals in the Netherlands," (7) "On the Definition of Goals and the Classification of Outcomes," (8) "Educational Problems and the Situation of Educational Research in the Netherlands." Article (2) is in French, Articles (3) and (4) are in German, and the remainder are in English.

5. Bushnell, David S. "An Education System for the 70's." Speech delivered at the Aerospace Education Foundation Conference, Washington, D.C., September 12, 1967. 22 pages. ED 017 738 MF $0.25 HC $1.20.

Although the United States' educational system has many achievements, it has many inadequacies. There is a need for a clearer definition of goals and an overhaul of the educational process. Although a lack of well-defined objectives and inadequate measuring procedures have prevented its effective use, the systems analysis methodology used by business can be applied to the problems of education. A proposed system, the "Organic Curriculum," will make possible the achievement of the objectives of preparing students with entry-level job skills, basic learning skills, cross-training in a cluster of occupations, training for the roles of citizens and adults, and personal development skills such as communication, inquiry, and problem solving. A student who graduates from high school should have the necessary qualifications for maximum flexibility in post-high school options. The integration and interaction of vital components which will result from a systems design will insure the most efficient and effective learning for the individual student through individually prescribed programs leading logically to achievement of adult behavioral goals. Steps for implementing the systematic approach include stating the program output specifications in terms of behavioral objectives, synthesizing the objectives among the various disciplines, developing appropriate materials and measurement instruments, and selecting media. Seventeen school districts have been selected to prepare for the new "Organic Curriculum" while the behavioral objectives are being developed. The plan calls for an investment of $30 million over the next five years. In summary, this educational program incorporates the idea of a continuous program curriculum with instructional techniques that emphasize active development, positive achievement, and self-direction of students.

6. Butts, David P. Stating Instructional Objectives, 1st Experimental Edition. Austin: Research and Development Center for Teacher Education, University of Texas, [1970]. 51 pages. ED 038 299 MF $0.25 HC $2.65.

   This instructional module has three main goals: (1) to establish the need and functionality of behaviorally stated objectives, (2) to establish a common functional language by which to describe behavior, and (3) to generate ability to construct specific descriptions of the expected student performance. An underlying purpose of this module is to emphasize the importance of instructional experiences for students being directed toward intentional, observable behavior change. The general pattern of instruction is one of presenting the situation with as little instructor direction as possible. Because of the diagnostic data available in the preappraisal experience, it is possible to determine which instructional sequence appears to be most appropriate for which student. The instructional format includes: Materials List, Preappraisal, Instructional Activities (with approximate time for each), and Postappraisal. Also included in this module are: Performance Objectives for the Module,

Rationale for the Module, References and Duplicated Materials. The population for which this instructional program has been found to be effective includes preservice and inservice elementary school teachers.

7. Carroll, J. B. "Psychological Considerations in Setting Aims for Foreign Language Teaching." Lecture given before the Seminaire International sur la Differenciation Structural entre les Buts de l'Enseignement des Langues sur les Divers Plans du Systeme Scolaire, Prague, Czechoslovakia, November 1-3, 1967. Association Nationale Federee de Tchecoslovaquie, 1968. 31 pages. ED 031 107 MF $0.25 HC $1.65.

   The paper considers the results of theory and research in the psychological aspects of foreign-language teaching as sources of guidance in making sound educational decisions concerning the aims of language teaching at all levels. Major attention is given to the suggestion offered by research findings that language aptitude depends upon a somewhat different set of abilities (primarily differences in learning rate), from those articles required to master other subject matter. A discussion of the Modern Language Aptitude Test's use for selection, guidance, and diagnosis precedes an explanation of the test's ability to measure, predict, and identify such distinctive foreign-language learning traits as (1) phonetic coding ability, (2) grammatical sensitivity, (3) rote learning ability for meanings of foreign language words and expressions, and (4) deductive learning ability. Briefly examined are the influences of the factors of age, length of study, and motivation on the learning of a foreign language. Concluding remarks concern the proper aims for language instruction and the teaching methods appropriate for achieving these goals.

8. Cohen, Arthur M., and Brawer, Florence B. Measuring Faculty Performance. Washington, D.C.: American Association of Junior Colleges, 1969. 90 pages. ED 031 222 MF $0.50 HC $4.60. (Also available from American Association of Junior Colleges, 1315 Sixteenth Street, N.W., Washington, D.C. 20036, $2.00.)

   This report focuses on the techniques, objectives, and problems associated with teacher and teaching evaluation. The first section of this two-part monograph was devoted to the discussion and appraisal of methods currently employed. Topics considered included: (1) a review of the standard techniques of supervisor, colleague, student, and self-evaluation; (2) a discussion of the problems inherent in these methods such as rater bias, ambiguity of purpose, and lack of definite criteria; (3) an overview of research attempting to relate teacher personality with teacher effectiveness; and (4) an outline of a program incorporated into the junior college teacher preparation program at UCLA that aimed at predicting the success of new teachers by the use of various personality

dimensions. A case for changing the purposes, methods, and criteria of faculty assessment was presented in Part Two. It was suggested that faculty evaluation, as a tool to improve instruction, must relate to instruction as a discipline with the focus placed on the effects of instruction, an approach that may result in the development of team-teaching techniques and evaluation among instructors on the basis of teaching effectiveness alone. The problems in specifying criteria for assessing teacher effectiveness, a rationale for using student achievement of learning objectives as the main criteria of teacher effect, suggested designs for assessing instructors, and a scheme for supervising instruction were presented.

9. Committee on Assessing the Progress of Education. Science Objectives. Ann Arbor, Michigan: 1969. 33 pages. ED 033 872 Document not available from EDRS. (Available from National Assessment Office, Room 201-A Huron Towers, 2222 Fuller Road, Ann Arbor, Michigan 48105, $1.00.)

   The general procedures used to develop educational objectives for the National Assessment of Educational Progress are outlined, as are the procedures used to develop science objectives. Four primary objectives of science education are stated: "Know fundamental facts and principles of science"; "possess the abilities and skills needed to engage in the processes of science"; "understand the investigative nature of science"; and "have attitudes about and appreciations of scientists, science, and the consequences of science that stem from adequate understandings." Each primary objective is divided into subobjectives. Behaviors typical of four chosen ages--nine-, thirteen-, and seventeen-year olds and adults--are delineated for many of the subobjectives. Appendices list the names of scientists, of lay panel chairmen, and of educational organizations involved in developing the objectives.

10. Cox, Richard C. "Item Selection Techniques and Evaluation of Instructional Objectives." Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, February, 1965, and reprinted from Journal of Educational Measurement, 2(1965). Pittsburgh: Learning Research and Development Center, University of Pittsburgh. 6 pages. ED 014 805 Document not available from EDRS.

    The validity of an educational achievement test depends upon the correspondence between specified educational objectives and the extent to which these objectives are measured by the evaluation instrument. This study is designed to evaluate the effect of statistical item selection on the structure of the final evaluation instrument as compared with the structure of its original item pool. The item pool consisted of 379 four- and five-option multiple-choice items used in an introductory natural

science test. These items were classified using the categories of Bloom's "Taxonomy of Educational Objectives"--knowledge, comprehension, application, and analysis. One thousand male and one thousand female students who had taken the examinations were randomly selected. The upper and lower 27 percent in each distribution were used to compute indices of item difficulty and discrimination, using difference and Davis indices. Both indices were then used to select the 100-item final test form. Two major conclusions resulted: (1) Statistical selection of items from the total item pool had a biasing effect on the selected tests, and (2) statistical selection of items from the total item pool operated differentially for male and female groups. These conclusions imply that statistical item selection alone is not sufficient for test construction.

11. Cox, Richard C., and Unks, Nancy Jordan. A Selected and Annotated Bibliography of Studies Concerning the Taxonomy of Educational Objectives--Cognitive Domain. Pittsburgh: Learning Research and Development Center, University of Pittsburgh, 1967. 39 pages. ED 013 655 MF $0.25 HC $2.05.

    The authors have compiled an annotated list of sixty-one reports of studies and other documents concerning the use of the taxonomy at various levels of education.

12. Crittenden, Brian, ed. Means and Ends in Education. Comments on Living and Learning. Occasional Papers 2. Toronto, Ontario: The Ontario Institute for Studies in Education, 1969. 124 pages. ED 033 886 Document not available from EDRS. (Available from the Ontario Institute for Studies in Education, 102 Bloor St. W., Toronto 5, Ontario, $2.00.)

    This collection of ten working papers is designed to contribute to analysis of issues and appraisal of recommendations in "Learning and Living: The Report of the Provincial Committee on Aims and Objectives of Education in the Schools of Ontario," the 1968 "Hall-Dennis Report" commissioned to develop aims and objectives and to propose means by which they might be achieved. An introduction points up themes and issues in the papers, each by an educator at the Ontario Institute for Studies in Education. The first six, which view the report as a whole, are (1) a comparison of Hall-Dennis with the 1950 Hope Commission Report, (2) a critique of the report's style of argument--its use of slogans, (3) a discussion of the need for more explicit objectives more useful in the evaluation of learning, (4) an argument that the Hall-Dennis aims are not stated as ends and thus are not attainable by the process of schooling, (5) a sociologist's exploration of the means of developing and applying Hall-Dennis principles through "participatory education," and (6) an analysis praising the report's vision but criticizing its proposed

means. Other papers concentrate on particular sections or topics discussing (1) implications for education evaluation; (2) evidence that bears on the education of handicapped children; (3) the concept of modeling, learning by imitation, and its application to Hall-Dennis themes; and (4) the financial cost of implementation.

13. East, Leon, and Dolan, Marylyn A. Student Performance Requirements: Other Educational Situations. Continuation Education System Development Project. Technical Report 1.3. La Puente, California: La Puente Union High School District, 1968. 93 pages. ED 034 217 MF $0.50 HC $4.75.

    Over a four-year period, the Continuation Education System Development Project will develop a practical instructional system capable of continuous identification and efficient response to the critical instructional needs of individual continuation high school students, or those who drop out or are pushed out, in La Puente, California. The first part of this report discusses the procedures used, including the identification of data needed and data sources, as well as data collected and analysis procedures. The critique of procedures, in both regular high schools and junior colleges, is the second part of the report. The findings in regular high schools, junior colleges, and nonpublic occupational training programs are given. In the summary of these findings, data about performance requirements in the above settings are assessed. In these settings, both communication and computation skills are needed. The minimal reading grade level should be 7.5 (mean). Personal skills necessary are also discussed. Data tables are provided.

14. East, Leon, and Dolan, Marylyn A. Student Performance Requirements: Employment Situations. Continuation Education System Development Project. Technical Report 1.4. La Puente, California: La Puente Union High School District, 1968. 144 pages. ED 034 218 MF $0.75 HC $7.30.

    Over a four-year period, the Continuation Education System Development Project will develop a practical instructional system capable of continuous identification and efficient response to the critical instructional needs of individual continuation high school students, or those who drop out or are pushed out, in La Puente, California. The first part of this report on student performance requirements in employment situations includes the procedures used, identification of data needed, data sources, data collected, and analysis procedures. A critique of these procedures is given. In the next part, the findings as related to education requirements, ability factors, and worker trait factors are discussed. In the summary of findings, requirements--including the need for some high school education and vocational

training--are noted. Civil service and jobs in elemental and machine work categories seem most suited to these students. Data tables are provided.

15. Eisner, Elliot W. H. Instructional and Expressive Educational Objectives: Their Formulation and Use in Curriculum. [1967]. 21 pages. ED 028 838 MF $0.25 HC $1.15.

Because different educational goals are based on individual sets of values, research findings considered highly significant by one group of educators will seem irrelevant to others. Empirical studies of educational objectives are needed to investigate (1) the relationship between the way objectives are formulated and their quality, (2) the extent to which teachers have educational objectives, (3) the effect objectives have on curriculum planning and instruction, and (4) the usefulness of educational objectives in facilitating learning. Educational objectives may be divided into two divisions: instructional objectives, which emphasize the acquisition of the known (skills defined in a predictive model of curriculum development), and expressive objectives, which elaborate and modify existing knowledge. Expressive objectives may produce new knowledge as a result of an educational encounter in which the child is free to explore. When expressive objectives are used by teachers, diversity (rather than homogeneity of response) is sought. There should be further research on the consequences of the use of each kind of objective.

16. Esbensen, Thorwald. Individualizing the Instructional Program. Duluth, Minnesota: Duluth Public Schools, 1966. 40 pages. ED 016 003 MF $0.25 HC $2.10.

As stressed and illustrated throughout the discussion, an individualized learning program or assignment must include objectives which are expressed in terms of specifically observable behavior. These objectives fall within four categories of intellectual tasks--knowledge, comprehension, application, and invention. To assess a student's achievement of a particular objective or task, the classroom teacher might use a "curriculum map," an example of which is inserted in this report. Individualizing instruction modifies the role of the teacher, and, instead of confronting a group of students with a collection of facts, he engages each student in the actual process of acquiring and generating knowledge. Sample individualized assignments, with objectives expressed in terms of a "criterion performance," are appended.

17. Esbensen, Thorwald. Performance Objectives. Duluth, Minnesota: Duluth Public Schools, 1967. 41 pages. ED 016 002 MF $0.25 HC $2.15.

The importance of expressing instructional objectives in terms of observable student performance is emphasized throughout this report. One section, which illustrates performance criteria in the teaching of Haiku, arranges instructional objectives under the headings of content classification, purpose, criterion performance, sample test solution, taxonomy, category, and resources. In an additional section the effect of new instructional objectives on curriculum is discussed. It is felt that, as instructional objectives change, there will be an increasing emphasis on individualized instruction, self-directed learning, and the integration of discrete subject areas, and that administrative and curricular reforms will be needed. The final section of the report contains an outline of a sample teacher-education objective and a test for the recognition of performance criteria.

18. Finn, Jeremy D. "Evaluation of Instructional Outcomes: The Use of Unstructured Data." Preliminary draft of paper presented at the annual meeting of the American Educational Research Association, Los Angeles, February 6, 1969. 21 pages. ED 030 944 MF $0.25 HC $1.15.

    Encouraging a broader view of education evaluation by emphasizing systematic means for the collection and analysis of a wide variety of types of evaluation data at all educational levels, an extension is proposed to the evaluation rationale formulated several years ago by Ralph W. Tyler. The revised model, patterned after the "Multiform Organismic System of Assessment" devised by the Office of Strategic Services, develops a principle of multiple measurements, placing basic data (test scores, teacher ratings, etc.) in a holistic spectrum consisting of many sorts of objective and subjective data. A "Behavior Dictionary" of measurable indicators of educational achievement is being developed as a tool for the analysis of quantitative evidence. The model, measuring cognitive, affective, and habitual behaviors in class and school situations, is being developed for initial application at the elementary school level.

19. Flanagan, John C. "Defining Educational Outcomes for Today's Schools and Assessing their Attainment." Paper prepared for Annual Conference (53rd) on School Administration and Supervision. Iowa City: Iowa Center for Research in School Administration, University of Iowa, 1968. 9 pages. ED 026 734 MF $0.25 HC $0.55.

    A school's educational objective should include three major types of goals for each individual: (1) preparation for an appropriate occupational role, (2) preparation for the responsibilities of citizenship, and (3) preparation for enjoying leisure activities. Previous efforts to individualize education have been relatively ineffective. An example of current efforts both to broaden and individualize educational outcomes

is Project PLAN, whose goals include the student's personal formulation of goals and plans, with each student given full responsibility for his development. The state of Pennsylvania is attempting to collect in a systematic fashion data required to define educational outcomes. Two other studies, an American Institute for Research study and Project TALENT, were conducted to develop methods for evaluating the attainment of educational outcomes. To improve the quality of their educational program, school administrators should make intensive case studies of samples of students, including the following items: community environment, home environment, personal history, personal activities, school experience, personal characteristics, and personal plans.

20. Flint, Bruce. Association of Selected Variables with Objectivity of Procedures Used by Louisiana Cooperative Extension Agents to Evaluate Accomplishments of Educational Objectives. Ph.D. thesis, University of Wisconsin, 1969. 164 pages. ED 027 487 Document not available from EDRS. (Available from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48103, Order Number 66-13, 788, Microfilm $3.00, Xerography $7.60.)

    This study focused on determining the levels of objectivity of procedures used by agents of the Louisiana Cooperative Extension Service to evaluate accomplishment of selected educational objectives. The population included 247 county agents who had developed and executed an educational program during 1965 and sixteen selected administrative and supervisory personnel. Information was obtained from mailed questionnaires, agents' annual plans of work, and narrative reports. Measurement scales were devised to categorize evaluation procedures used by agents and to classify the level of accomplishment reported by agents in annual narrative reports. Differences were not large enough to be statistically significant between levels of objectivity of evaluation procedures used and the following: (1) amount of time spent by agents in receiving training, planning programs, executing programs, and evaluating accomplishments; (2) different job categories of agents; and (3) length of their service. Among other things, it was concluded that: (1) extension agents should limit their objectives; (2) training should be given in evaluative procedures; and (3) educational programs should be evaluated through objective procedures. The letters and questionnaire used in the study are included.

21. Foley, Walter J. "The Role of Educational Outcomes in Evaluation Strategy." Paper prepared for Annual Conference (53rd) on School Administration and Supervision. Iowa City: Iowa Center for Research in School Administration, University of Iowa, 1968. 6 pages. ED 030 940 MF $0.25 HC $0.40.

From a systems analysis viewpoint, an evaluation system is a subsystem superimposed on the educational system to provide information for decisions related to its maintenance and goals. Educational outcomes, viewed as a much broader concept than the traditional view of changes in pupil behavior, represent the starting point for any evaluation activity in education. To evaluate an instructional program in terms of all of its significant interactions, an evaluation strategy (plan) is required which systematically provides information concerning both (1) input and output changes caused by related subsystems, and (2) output changes caused by alterations of the system under consideration.

22. Gagne, Robert M. "The Analysis of Instructional Objectives." Draft of paper read at the Symposium on Programmed Instruction, National Education Association, Washington, D.C., March 24-26, 1963. 51 pages. ED 015 686 MF $0.25 HC $2.65.

    This paper discusses aims, effects, and implications of specifying objectives for programed instruction, and cites examples from the literature.

23. Giammatteo, Michael C. Target Group Analysis: Aids for Evaluation. Field Paper 9. Portland, Oregon: Northwest Regional Educational Laboratory, 1969. 8 pages. ED 031 785 MF $0.25 HC not available from EDRS.

    To develop a systematic evaluation system, a planning team should initially identify the needs of target groups. Needs which can be met are defined as behavioral objectives. Once the behavioral objectives and those specific elements essential to achieving them (enabling objectives) are defined and classified, performance measures can be constructed. These measures provide feedback into the system for evaluation of progress toward specific behavioral outcomes. Results of this feedback will determine whether modification and recycling of the system are necessary to achieve the desired behavioral outcomes. A flow chart representing the major stages of evaluation systems development is included.

24. Giammatteo, Michael C. "Team Processes Related to Educational Objective Development." Paper presented at a training session for teachers and administrators at Jefferson High School, Portland, August 28, 1968. Portland, Oregon: Northwest Regional Educational Laboratory. 11 pages. ED 031 729 MF $0.25 HC $0.65.

    Team processes as related to educational objective development are divided into two parts: (1) a low-level conflict exercise, and (2) an educational objectives worksheet. Part One of the exercise involves showing a neutral document on the overhead projector and eliciting

responses to certain specific questions. This is done as a large group first and then in four small groups. The process is diagrammed with appropriate feelings of group members. The next activity involves giving each member a document and having them subject their document to the group transaction. Part Two utilizes Bloom's Taxonomy of Educational Objectives. In this are three behavior categories: (1) cognitive domain, (2) affective domain, and (3) psychomotor domain. Individuals are asked to analyze examples in terms of these subcategories. A worksheet on objectives, educational and instructional, is included along with a systems sheet on the parts of education.

25. Glaser, Robert. "The Design of Instruction." Reprint of chapter in The Changing American School: The Sixty-Fifth Yearbook of the National Society for the Study of Education, Part 2. Pittsburgh: Learning Research and Development Center, University of Pittsburgh, 1966. 32 pages. ED 011 509 MF $0.25 HC $1.70.

    The theory and the research relevant to instructional design are discussed in this paper. Generalization, concept formation, and "process" objectives are discussed in a section devoted to the analysis of subject-matter objectives of instruction. The importance of adequately assessing preinstructional student behavior is treated. Kinds of behavioral operations in learning, as well as some conditions that influence learning, are discussed. Procedures for evaluating achievement are analyzed. The author concludes that modern experimental psychology has rarely been a significant influence in the development of teaching materials and teaching procedures. In addition, he hypothesizes that the educative process and instructional procedures will be influenced by research and marked changes will occur in school operations. Changes likely to occur are the role of the teacher, individualizing instruction, careful examination of instructional materials for education effectiveness, and improvement in evaluation instruments and techniques.

26. Glaser, Robert. "Objectives and Evaluation: An Individualized System." Reprint from Science Education News, (June 1967). Pittsburgh: Learning Research and Development Center, University of Pittsburgh, 1967. 5 pages. ED 015 844 MF $0.25 HC $0.35.

    The most important factor in improving educational attainment is the analysis and specification of educational objectives and learning outcomes. The definition of instructional objectives for the curriculum designer, teacher, and student serves as a guide for attaining goals. When information about student performance is the basis for curriculum design, student performance must be diagnosed beyond the measurement of student standing within a group. Work needs to be done in developing criterion-referenced tests to assess the outcomes of learning.

27. Griffits, Horace Franklin. "A Study Defining Eight Objectives of Business Programs in Public Community Colleges and Determining the Importance of these Objectives." Doctoral thesis. 1967. 189 pages. ED 027 385 Document not available from EDRS. (Available from University Microfilms, Inc., 300 North Zeeb Road, Ann Arbor, Michigan 48103, Order Number 68-4143, Microfilm $3.00, Xerography $8.80.)

Eight curriculum objectives of public community college business programs were defined by the researcher and validated by a jury of thirty educators. The presidents and business department heads of 376 public community colleges were asked by questionnaire to rank the eight objectives. Presidents and business department heads of seventeen Texas public junior colleges were interviewed to determine the problems in implementing courses designed to accomplish the objectives defined in the study. The curriculum objectives are transfer, technical, semi-professional, supplemental, re-training, developmental, opportunity, and vocational. Some conclusions were: (1) technical and semi-professional objectives will become as important as the transfer objective in public community college business programs, (2) programs to provide appropriate occupational training for adults will increase, (3) adequate occupational training programs for low-ability adults or courses for adult vocational use will not likely be provided, (4) business department heads are unable to effect appropriate programs when the pervading institutional philosophy is traditional and conservative, and (5) a real problem is the inability of colleges to use advisory boards effectively and/or to employ consultants in curriculum development.

28. Irvine, David J. "Performance Indicators in Education." Paper presented at the Commissioner's Conference on State and National Assessment, December 4, 1968. Albany: Bureau of School Programs Evaluation, New York State Education Department. 6 pages. ED 027 626 MF $0.25 HC $0.40.

Evaluation of education involves assessing the effectiveness of schools and trying to determine how best to improve them. Since evaluation often deals only with the question of effectiveness, performance indicators in education are designed to make evaluation more complete. They are a set of statistical models which relate several important variables to objectives of the schools. The objectives considered may be student achievement, noncognitive functioning, or social functioning. These objectives are analyzed for statistical relationships with such variables as demographic characteristics, student characteristics, and elements in the school organization. Steps in developing such models include stating the educational objectives, selecting and developing measures for each objective and variable, collecting data from each school district, and analyzing the data to determine the best mix of variables related to

each objective. By looking at the relationships between variables and objectives, descriptive, predictive, and optimization information is generated. Although absolute answers are not provided, the instruments should help school officials decide on allocation of funds, schoo organization, teaching methods, and instructional material best suited for achieving a school's objectives.

29. Koran, John J., Jr., and others. How to Use Behavioral Objectives in Science Instruction. Washington, D. C.: National Science Teachers Association, 1969. 12 pages. ED 036 428 MF $0.25 HC not available from EDRS. (Available from National Education Association, 1201 Sixteenth Street, N.W., Washington, D.C. 20036, Stock Number 471-14596, $0.35.)

    Behavioral objectives serve several functions: (1) identify expected learner outcomes for a given lesson or unit of study, (2) provide a basis for selection and organization of materials and experiences for effective learning, (3) provide a systematic means for devising ways of evaluating student performance and (4) provide a means to identify those behaviors that children are already exhibiting prior to presentation of a lesson designed to produce behaviors. When writing a behavioral objective, one must use a specialized verb limited to few interpretations. It is important to describe the situation in which the desired behavior is to be observed. The minimal acceptable performance for a given behavioral objective must be identified. Behavioral objectives can be written for different learning outcomes: (1) cognitive learning, (2) affective learning, and (3) psychomotor learning.

30. Lombard, John W., and Owen, William B. Objectives of Science Education, Compiled as a Guide to the Development of an Assessment Program in Science Education. Chicago: Science Research Associates, Inc., 1965. 55 pages. ED 013 763 MF $0.25 HC $2.85. (Also available from Science Research Associates, Inc., 259 East Erie Street, Chicago, Illinois 60611.)

    The objectives of science education considered important by selected persons in the United States were ascertained. These objectives were used by the exploratory committee for evaluating the progress of education in development of a program to assess the educational attainments of representative nine-, thirteen-, and seventeen-year-olds, as well as adult high school graduates. The objectives were derived from (1) a study of the literature, (2) statements of members of the committee of consultants, and (3) comments by reviewers of the preliminary draft of objectives. The major objectives, stated in terms of student behavior, were: (1) their ability to apply, in appropriate situations, the methods, techniques, and rational processes associated with scientific work; (2) their understanding of the major conceptual schemes that currently

interrelate, and form the core of, the various scientific disciplines; (3) their understanding of the position, limitations, and potential of science and its applications in today's society, and their attitudes toward scientists and their work; (4) their interests in science, which, for some students, are manifested by movement toward scientific or technical careers, and which, for all students, are displayed outside formal schooling by their continued learning in, and attention to, scientific subjects; and (5) their realization of science as a human intellectual activity. The statements of the five major objectives are classified according to the "Taxonomy of Educational Objectives." The document also contains (1) lists of the members of the consulting and reviewing committees, (2) an extensive bibliography, and (3) a condensed version of the "Taxonomy of Educational Objectives"--both cognitive and affective domains.

31. Loomer, Bradley M. "Objectives and Assessment: The Task." Paper prepared for Annual Conference (53rd) on School Administration and Supervision. Iowa City: Iowa Center for Research in School Administration, University of Iowa, 1969. 12 pages. ED 030 960 MF $0.25 HC $0.70.

    Although literature on educational objectives dates back more than fifty years, the last twenty years have seen a renewal of interest in objectives. The taxonomy approach currently in use expresses objectives in terms that are evidenced by pupil behavior. This approach deals with objectives that relate to three separate domains of learning: cognitive, affective, and psychomotor. Although the domains are analytically separate, in reality they work together. Curriculum guides indicate that the majority of schools fall between an all-inclusive approach and a highly specific approach to stating objectives. The literature also contains groupings of objectives as ultimate and immediate, or as general and specific. Several sources state that curriculum theory is limited by the functions educational objectives perform. Too many objectives attempt to prescribe and predetermine the behavior of the next generation. Teachers perform a more specific role, administrators a more general role, in relation to objectives. Belief in a particular learning theory does affect the process of stating objectives.

32. Maffett, James E. Instructional Performance Objectives for a Course in General Biology. Bradenton, Florida: Manatee Junior College, n.d. 36 pages. ED 016 482 MF $0.25 HC $1.90.

    The instructional objectives of a freshman course in general biology are organized for the student's ease of reference. The course is outlined, by degree of complexity, as follows: (1) orientation and introduction, (2) origin and organization of life, (3) cytology, (4) metabolism and biochemistry, (5) plant life (vascular and non-vascular),

(6) invertebrates (protozoan and metazoan), (7) vertebrates and chordates, (8) physiology, (9) reproduction, embryology, and genetics, and (10) ecology, diversity, and adaptation. The student will also be expected to know standard experiments. At all times throughout the year, the student, by knowing what is expected of him at each step, can be aware of his progress as compared with the instructor's purpose. All objectives are stated in behavioral terms.

33. Mayer, Frederick R. The Establishment of Objectives for Large Group Instruction and Teacher's Appraisal of the Extent to Which These Objectives Were Being Achieved. Abington, Pennsylvania: North Campus, Abington High School, 1967. 26 pages. ED 027 605 MF $0.25 HC $1.40.

    As part of an Elementary and Secondary Education Act Title III study of selected aspects of the program at Abington High School-North Campus, a committee was formed to (1) identify valid objectives for large-group instruction used at the school, and (2) determine teacher appraisal of the extent to which these objectives were being reached. The committee constructed an opinionnaire based on the objectives which were identified. Completed opinionnaires were received from thirty-two teachers. Six conclusions concerning large-group instruction were reached: (1) Teachers evidenced a high degree of creativity in planning for and presenting their lessons; (2) teachers were selected to conduct the lessons because of some special knowledge, talent, or ability; (3) the scheduling of teachers for supervision during those times when they were not actually involved in the presentation could be done more prudently; (4) when planning presentations, teachers should make provision for increased pupil involvement in the actual presentation; (5) those responsible for planning presentations did not make effective use of outside resources; and (6) the large-group lesson is an effective way of helping teachers avoid needless repetition of materials. Recommendations based on these conclusions are made.

34. McDonald, Blair W., and others. A Selected Bibliography of Organizational Climate Studies Relevant to Research Performance. Greensboro, North Carolina: Creativity Research Institute, Richardson Foundation, 1967. 19 pages. ED 023 167 MF $0.25 HC $1.05.

    This selected bibliography of articles and books concerns the effects of industrial climate on research performance.

35. Metfessel, Newton S., and others. "Instrumentation of Bloom's and Krathwohl's Taxonomies for the Writing of Educational Objectives." Paper presented at the annual meeting of the American Educational Research Association, Los Angeles, February 5-8, 1969. 12 pages. ED 028 509 MF $0.25 HC $0.70.

A need exists for a more clear-cut description of how the taxonomy of educational objectives can be implemented in the school setting. In answer to that need, a way is shown to formulate specific behavioral objectives within the hierarchy of the major levels and sublevels of the taxonomies as set forth by Bloom (1956) and Krathwohl (1964). To facilitate the formulation of statements of specific behavioral objectives within the framework of Bloom's taxonomy, two tables are constructed for classifying taxonomies in the cognitive and affective domains. Each table has three columns: (1) the taxonomic classification identified by code number and terminology, (2) appropriate infinitives which a teacher or curriculum worker might consult to achieve a precise or preferred wording of the behavior or activity desired, and (3) general terms relative to the subject matter properties.

36. Mial, Dorothy, ed., and others. Education Conference to Consider Suitable Goals of a Curriculum Development Effort. Final Report. Washington, D.C.: National Training Laboratories Institute for Applied Behavioral Science, 1969. 159 pages. ED 035 989 MF $0.75 HC $8.05.

This final report of a conference on curriculum development within the ES '70 program is divided into three parts. The first part contains addresses concerning the comprehensive high school and the ES '70 program as a curriculum innovation. Three current trends--individualized instruction, changes in instructional theory, and changes in instructional technology--are related to the ES '70 program. Part Two stresses the need to formulate an interlocking system, from the federal level to the local classroom, in the area of planned change. Through a systems approach, a capacity to apply all relevant knowledge and the use of inside and outside resources, the program for planned change would be enhanced. Part Three extracts the implications of a smaller ES '70 conference group in New Orleans. The importance of the student and his educational needs are emphasized. A case study in educational improvement through planned change concludes the report.

37. Moreno, Edward V. Performance Outcomes for 6th Grade Spanish Program. [Preliminary Draft] El Rio, California: El Rio Elementary School District, 1968. 9 pages. ED 039 812 MF $0.25 HC not available from EDRS.

This planning model for pupil performance outcomes in sixth-grade Spanish instruction emphasizes oral activities. A global objective, expansion objectives, description of pupil behaviors, and evaluation of pupil performance are illustrated in charts through the branching of interrelated elements. The following objectives are developed in the design of the planning model: (1) pronunciation proficiency, (2) vocabulary comprehension, (3) structural facility, (4) cultural awareness, and (5) motivation for learning Spanish. An integrated

series of exercises of pupil behaviors and performances as a curriculum-design model constitutes the major portion of this document.

38. Morgan, Robert M. "ES '70: A Systematic Approach to Educational Change." Papers presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February 7, 1969. 14 pages. ED 029 371 MF $0.25 HC not available from EDRS.

In May 1967, a group of individual school districts from around the nation joined forces with the United States Office of Education to devise and execute a long-range program for the development of a new secondary school curriculum and organization. The program is called "Educational Systems for the Seventies" (ES '70). The eighteen participating schools represent a cross-section of the nation's schools. The planning effort for the project has identified four broad classes of activities to be carried out: (1) staff development, (2) instructional management and career guidance, (3) school management, and (4) evaluation. The activity having the highest priority is the setting of educational goals and operationally defining the performance objectives. Each graduate will have received a comprehensive education including the requisite background for college entry and salable job skills. This will be accomplished by individualized instruction. The project also provides for the development of models for curriculum development. The use of computers will be necessary in the management of the learning function and for data-processing purposes. A number of related activities have already been started to assist ES '70.

39. National Council of Teachers of English. "The Basic Issues in the Teaching of English." Supplement to Elementary English, (October 1959). 16 pages. ED 016 640 MF $0.25 HC $0.90. (Also available from the National Council of Teachers of English, 508 South Sixth Street, Champaign, Illinois 61820, Stock Number 00509, $0.25.)

In 1958, four professional organizations collaborated to assess, clarify, and define the teaching of the subject of English from kindergarten through graduate school. They proposed thirty-five basic issues in the form of questions to be resolved by the English teaching profession. Twenty-one of the issues requested an examination of the nature of English, its goals, content, and teaching problems, and fourteen questioned the preparation, certification, and inservice training of English teachers on the elementary, secondary, and college levels. The responsibility for finding solutions to the thirty-five questions was entrusted to individual teachers, English departments, national professional organizations, and sponsoring foundations. It was generally believed that success in solving these thirty-five problems would effect a sequential and cumulative English curriculum, embracing both practical and human values.

40. Norris, Eleanor L. Writing Objectives. Ann Arbor, Michigan: Committee on Assessing the Progress of Education, 1969. 19 pages. E ↄ 033 870 Document not available from EDRS. (Available from National Assessment Office, Room 201-A Huron Towers, 2222 Fuller Road, Ann Arbor, Michigan 48105, $1.00.)

The general procedures used to develop educational objectives for the National Assessment of Educational Progress are outlined, as are the procedures used to develop writing objectives. Four objectives related to writing skills are stated: (1) "Write to communicate adequately in a social situation"; (2)"write to communicate adequately in a business or vocational situation"; (3) "write to communicate adequately in a scholastic situation"; and (4) "appreciate the value of writing." Each of the first three objectives is defined more specifically in terms of tasks appropriate for four chosen age levels: nine-, thirteen-, and seventeen-year-olds, and adults. The fourth objective is discussed in terms of three subgoals. Appendices list the names of experts, of lay panel chairmen, and of educational organizations involved in developing the objectives.

41. Ohio State University. Course Objectives for Industrial Technology I, The World of Construction. Columbus: 1966. 69 pages. ED 013 954 MF $0.50 HC $3.55.

Objectives are presented for a one-year course in industrial arts, "The World of Construction." These are prepared at two levels: (1) statements indicating the more general outcomes of the course of instruction, and (2) statements of a detailed nature specifying daily terminal behavior of pupils. The objectives cover the cognitive, affective, and psychomotor domains of educational objectives and emphasize both mastery and transfer dimensions. A study of industrial arts will enable the pupils to: (1) understand the concepts, principles, generalizations, problems, and strategies of industrial technology, (2) have an interest in and an appreciation of industry as that element of the economic system which provides industrial material goods to satisfy human wants for those goods, and (3) demonstrate knowledge and skills that will be useful in life situations of occupational, recreational, consumer, and sociocultural significance. Seventeen course objectives are listed. Behavioral objectives are listed for 170 days of instruction.

42. Politzer, Robert L. Performance Criteria for the Foreign Language Teacher. Technical Report No. 1A. Stanford, California: Stanford Center for Research and Development in Teaching, Stanford University, 1967. 62 pages. ED 034 733 MF $0.50 HC $3.20.

The performance criteria which are enumerated and briefly discussed in this booklet represent an attempt by foreign language teachers trained in the Stanford Teacher Education Program "to describe the essential features of the performance of the good and experienced language teacher." They are intended to be of use as a series of tentative hypotheses for further research, a guide to evaluation of teacher performance, and an instrument for teacher training. The teachers involved in the development of this booklet (the majority of whom are teaching the first or second levels in an audiolingual approach to language instruction) have identified eleven general types of classroom activity: audiolingual activity, presentation of basic material, teaching of structure, teaching of pronunciation, teaching of sound-letter correspondence, teaching of reading, teaching of culture, use of visual aids, use of electronic equipment, homework assignments, and testing. Each of these has been defined more completely in terms of a variety of specific and observable behaviors which are presented in both outline and discussion form. Included is a sample evaluation sheet based on the criteria. The booklet is Part Three of a syllabus being developed for the training of language teachers in applied linguistics, language review, and performance criteria.

43. Pond, Karl S. "Objectives, Tests, and Motivation." Address given at the annual meeting of the National Association of Language Laboratory Directors, Atlantic City, New Jersey, April 3, 1967. National Association of Language Laboratory Directors Newsletter, 2,1(December 1967). 5 pages. ED 036 233 MF $0.25 HC $0.35.

    Claiming that the actual learning of basic language skills takes place in the language laboratory, the author states four requisites for effective use of the laboratory: (1) a clear statement of specific objectives, (2) instructions for the student, (3) realistic objectives, and (4) student rewards. Testing, learning theory, applied linguistics, discrimination training, pattern drills, and analogy are examined with the prime consideration of student motivation in mind. The close coordination of the classroom and the language laboratory is seen as being vital to the justification of laboratory use.

44. Popham, W. James. "Behavioral Objectives and Teaching Skills." Abridgement of an address delivered at the Conference of the Modern and Classical Language Association of Southern California and the Foreign Language Council of San Diego, April 19, 1969, San Diego, California. Forum, 8,1(October 1969). 4 pages. ED 036 228 MF $0.25 HC $0.30.

    In this abridged talk concerning the preparation of behavioral objectives for foreign language learning, the author expounds on procedures considered necessary for curriculum development. The four-step model

includes: (1) specification of objectives, (2) preassessment of previously acquired skills or knowledge, (3) determination of instructional sequence, and (4) student evaluation. Attainment of instructional objectives as the goal in the teaching and learning relationship is stressed in the article. The Instructional Objectives Exchange at the Unversity of California, Los Angeles, (UCLA) is also treated. Discussion of performance tests of teaching proficiency developed at UCLA involving experienced teachers, housewives, television technicians, and garage repairmen concludes the article.

45. Rentel, Victor M. "Ends and Means: Developing Specific Objectives for Reading Instruction." Paper presented at the International Reading Association Conference, Seattle, May 4-6, 1967. 11 pages. ED 015 089 MF $0.25 HC $0.65.

Since objectives for reading instruction help determine the future of learners, these objectives should be formulated carefully. While society's demands should be considered in developing objectives, their selection depends on the teaching staff's convictions and philosophy of education. What is known about the learning process and about the learner, however, must be considered. Curriculum experts recommend using specific objectives to clarify and illustrate larger objectives. If general objectives are used, levels of generalization must be defined and verified experimentally. Objectives should be in behavioral terms, placed in hierarchial order according to theories of development and maturation, and compared with and classified according to developed systems of defining goals in behavioral terms. Teachers should give learners the chance to try what is asked of them. These tasks must be gratifying enough to stimulate them to try new ways of achieving the same goals. While reading instructional objectives define and direct learning, the reading program should be flexible enough to allow for individual differences.

46. Ronan, William W., and Prien, Erich P. Toward a Criterion Theory: A Review and Analysis of Research and Opinion. Greensboro, North Carolina: Creativity Research Institute, Richardson Foundation, 1966. 110 pages. ED 023 166 MF $0.50 HC $5.60.

Literature dealing with the development and utilization of work performance criteria is reviewed in terms of (1) the reliability of job performance as a criteria, (2) the reliability of job performance observation as a criteria, (3) the dimensionality of job performance, and (4) extra-individual conditions which modify job performance. From this review, theorems and corollaries are formulated, testable hypotheses are derived, and fifteen areas in which further research would be useful are suggested. It is concluded that variation in job performance

is a result of a wide range of causal influences and that its measurement is nebulous. A 226-item bibliography is included.

47. Rosenfeld, Michael. An Evaluation Plan for the Greene Joint Vocational School. Pittsburgh: American Institute for Research in Behavioral Sciences, 1967. 209 pages. ED 016 824 MF $1.00 HC $10.55.

The purposes of this project were: (1) to develop a set of objectives which accurately reflected the tasks the school would like to attempt and the outcomes needed in order to view the school as successful, and (2) to develop a set of instruments and a plan for gathering data which would allow the staff to evaluate and determine the achievement of each of their objectives. The plan was designed to be carried out by the school staff with minimal assistance from outside specialists. Greene Joint Vocational School objectives, as set forth by the school staff, are grouped according to the element they are intended to serve--students, feeder schools, adults, staff, employers, and community. For each objective, there is a list of data to be collected, with the source identified. Data summary sheets identify the items to be used to assess each objective. An evaluation plan contains a description and explanation of the manner in which the assessment items can be used and specifies who should fill out the item, the time it should be administered, the individual responsible for summarizing the data, and the action to be taken. Evaluation forms to be completed by students, graduates, adult graduates, employers, staff, and community groups are included. Copies of data summary sheets and evaluation forms are included.

48. Sharpe, Glyn H. Some Behavioral Objectives for Elementary School Mathematics Programs. Denver: Colorado State Department of Education, 1966. 30 pages. ED 017 454 MF $0.25 HC $1.60.

This publication outlines some of the terminal behavioral objectives of the elementary mathematics instructional program. Instructional objectives which specify explicitly what skills pupils have mastered are indicated for many of the topics of mathematics. For each objective, at least one example is given to clarify the behavioral criterion which determines when that objective has been reached by the pupil. Checklists of competencies follow operational definitions of mathematical concepts to show the relationship between the behavioral objective of an exercise and the tasks required of the child. Each checklist is designed for evaluating goal attainment immediately after each exercise.

49. Shugert, Diane P. "A Rationale for Curriculum Decisions." In The Growing Edges of Secondary English: Essays by the Experienced Teacher Fellows at the University of Illinois 1966-1967, edited by Charles Suhor and others, pages 3-27. Champaign, Illinois: National Council of Teachers of English, 1968. 26 pages. ED 027 294 MF $0.25 HC not available from EDRS. (Complete document available from National Council of Teachers of English, 508 South Sixth Street, Champaign, Illinois 61820, Stock Number 02455, $2.95.)

Designing an English program to close the startling discrepancy between high educational aims and current teaching practices requires a delineation of learning objectives. A rationale that would achieve a clarification of goals should be based on a sound theory of the learning process and be guided by the writings of such educational philosophers and psychologists as Robert Mager, Benjamin Bloom, David Krathwohl, John Dewey, and Foster McMurray. This study would prepare curriculum designers to (1) determine realistic behavioral and cognitive learning objectives, (2) effect, through discovering and organizing their own goals and values, internally consistent and readily demonstrable curriculum decisions, and (3) base their selection of curricular materials on an understanding of the learning process in a democracy, the school's function as a social institution, and the subject matter of English.

50. Simpson, Elizabeth J. The Classification of Educational Objectives, Psychomotor Domain. Urbana: University of Illinois, 1966. 45 pages. ED 010 368 MF $0.25 HC $2.35.

A schema for classifying educational objectives in the psychomotor domain is developed. The general procedures include (1) a comprehensive review of related literature, (2) the collection and analysis of behavioral objectives of the domain, (3) laboratory analyses of certain tasks to discover by observation and introspection the nature of the psychomotor activity involved, and (4) conferences with scholars who have specialized knowledge of the domain. The tentative classification system is presented in taxonomic form in the conclusion of the report.

51. Smith, Joseph Richard. "Validation of the Objectives of Public School Adult Education." Doctoral thesis, University of California, 1966. 133 pages. ED 017 808 Document not available from EDRS. (Available from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48103, Microfilm $3.00, Xerography $7.40.)

The major goals of public school adult education identified in this study are: (1) general education for self-realization, (2) occupational education for economic efficiency, (3) citizenship education for civic responsibility, (4) homemaker education for family life, (5) special education

to meet individual and community problems, and (6) recreation education for use of leisure time. The objectives which contribute to the achievement of these goals are listed. Procedures used include: (1) consultation and interviews with professors of adult education and with chief administrative officers in state departments of education and state and national professional associations of public school adult educators, (2) a survey of the literature relating to adult education in the public schools, (3) examination of program offerings in school districts participating in the study, (4) evaluation of replies from a panel of authorities on objectives of public school education, (5) analysis of the degree of agreement between adult educators and the panel, and (6) drafting a statement of objectives of public school adult education.

52. Sorenson, Garth. "A New Role in Education: The Evaluator." Reprinted from Evaluation Comment, 1,1(January 1968). Los Angeles: Center for the Study of Evaluation of Instructional Programs, University of California. 4 pages. ED 021 818 MF $0.25 HC $0.30.

With the increase of federal funds for education, a new professional is emerging--the "evaluator"--whose role needs to be more clearly defined. First of all, he must not take an absolutist position in his relationship to other educational experts or he will fail to get the cooperation of teachers and the support of powerful community groups. Second, he must accept certain basic assumptions with regard to educational goals: (1) Educational goals should be defined in a process of interaction between professionals and representatives of the society; (2) goals and practices must be varied to accommodate a diverse population and must change as needs and values change; (3) goals must not be limited purely to academic objectives, and they must be stated in descriptive rather than interpretive language. The function of the professional evaluator should be to help teachers and administrators in a given school (1) define their goals in terms of pupil performance, (2) learn how to discover pupil differences requiring particular kinds of instruction, and (3) design and administer evaluation programs to discover which of their instructional procedures are paying off and which are not. It is hoped that the research and development evaluator will bridge the gap between the laboratory and the field by making explicit to the individual teacher the relevance of research findings in his work.

53. Strevens, Peter. "Where Has All the Money Gone? The Need for Cost-Effectiveness Studies in the Teaching of Foreign Languages." Preprint for private circulation of paper delivered to the Technology Section, Second International Congress of Applied Linguistics, Cambridge, England, September 1969. 8 pages. ED 036 244 MF $0.25 HC $0.50.

A cost-effectiveness study in the teaching of foreign languages would, if implemented, aim (1) to determine the results of cost effectiveness by the introduction of new aims, methods, and equipment; (2) to estimate the efficacy of existing resources; and (3) to examine any other means by which productivity per student-cost could be improved. The following concepts, related to cost effectiveness, are studied in this paper: observable change, costs, benefits, system, capital and other expenditures, value, wastage, productivity, terminal standards, programed learning, and product value change assessment. Causal relationships and areas for systems improvement are stressed. The author suggests that such a study would advance the goals of applied linguistics.

54. Tuckman, Bruce W. The Student-Centered Curriculum: A Concept in Curriculum Innovation. New Brunswick, New Jersey: Graduate School of Education, Rutgers, The State University, 1969. 21 pages. ED 032 616 MF $0.25 HC $1.15.

The following postulates provide the basis for development of an innovative student-centered curriculum: (1) A curriculum must be defined in terms of the students' educational needs; (2) for the majority of students, occupational goals require less than a bachelor's degree; (3) a curriculum must be defined in terms of the psychological structure and educational experiences of students; (4) learning of the concrete must precede learning of the abstract; (5) learning can be maximized by controlling the sequence towards some goal, locating the student in that sequence, and combining sequences that are psychologically similar; and (6) learning is most meaningful when a person learns through interaction with his environment. To construct a student-centered curriculum, the curriculum must be vocationalized; it must be developed and analyzed sequentially on the basis of behavioral objectives and psychological characteristics; individuals should be simultaneously instructed when they are at the same point in the same sequence; and the learning environment should be structured to maximize the probability of learning through participation.

55. Walker, Decker F. "A Study of Types of Goal Statements and Their Uses in a Curriculum Development Project." Paper presented at the annual meeting of the American Educational Research Association, Los Angeles, February 8, 1969. 10 pages. ED 030 192 MF $0.25 HC $0.60.

Five published articles by Elliot Eisner, director of a curriculum development project in the visual arts for elementary school pupils, were examined to determine the comparable applicability of expressed educational objectives. Ninety-nine goal statements were differentiated into five categories: (1) AIMS describe a desired final state or process; (2) EXPLANATIONS specify a relation that the author believes exists

between phenomena of importance in curriculum; (3) CONCEPTIONS reveal the curriculum planner's central conceptions and their relations with one another and with the phenomena; (4) EXEMPLARY PRODUCTS describe activities or materials which serve as models of successful curriculum development; and (5) PROCEDURES describe actions to be performed whenever certain standard situations arise. A staff survey indicated that for a new project member AIMS are not significantly more useful than other types of goal statements, positive statements are more useful than negative statements, and concrete statements are perceived to be more useful than abstract statements.

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